(FILE 'HOME' ENTERED AT 12:12:37 ON 21 OCT 2004)

FILE 'MEDLINE, EMBASE, CAPLUS, BIOSIS' ENTERED AT 12:13:15 ON 21 OCT 2004

L1	2391485	S	CALCIUM OR CA
L2	3352913	S	PLASMID OR DNA OR NUCLEIC
L3	75645	S	L2 AND L1
L4	10741985	S	ENHANC? OR INCREAS?
L5	121365	S	GENE DELIVERY OR GENE TRANSFE? OR NUCLEIC ACID TRANSFE? OR DN
L6	894	S	L5 AND L4 AND L3 AND L2 AND L1
L7	881514	S	IONS
L8	27	S	L7 AND L6
L9	14	DUP REM	L8 (13 DUPLICATES REMOVED)

L9 ANSWER 6 OF 14 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN DUPLICATE 3

AN 1998021514 EMBASE

TI Mechanism of **calcium** ion induced multilamellar vesicle-**DNA** interaction.

AU Mozafari N.R.; Hasirci V.

CS V. Hasirci, Middle East Technical University, Biotechnology Research Unit, Biotechnology Research Unit, Ankara 06531, Turkey

SO Journal of Microencapsulation, (1998) 15/1 (55-65).
Refs: 40
ISSN: 0265-2048 CODEN: JOMIEF

CY United Kingdom

DT Journal; Article

FS 022 Human Genetics
027 Biophysics, Bioengineering and Medical Instrumentation
030 Pharmacology
037 Drug Literature Index
039 Pharmacy

LA English

SL English

AB The effect of Ca2+ on the **DNA** interaction with anionic and neutral multilamellar vesicles (MLV) has been investigated. **DNA** from wheat (Triticum aestivum L. Gerek) was introduced to a suspension of MLV, composed of phosphatidylcholine (PC):dicetylphosphate (DCP):cholesterol (CHOL) at different molar ratios, to which Ca2+ (5-75 mM) was subsequently added. Indication of aggregation and/or fusion was obtained via light-scattering examination following the addition of Ca2+ and **DNA** to the MLV medium. Using a UV spectrophotometric assay, it was observed that although **DNA** alone has no effect on negatively charged MLV, it **enhances** liposomal interaction in the presence of **calcium ions**. The minimal Ca2+ concentration required to promote the interaction was detected to be 10 mM, and the highest level of interaction was observed at 75 mM. The aggregation/fusion of vesicles was detected for uncharged MLV (with no DCP in their structure), as well as for the anionic ones containing c. 10% CHOL, but not for anionic MLV containing 40% CHOL. This is explained in terms of cholesterol decreasing the membrane fluidity (above the Tc of components) as a result of which more rigid vesicles become less prone to aggregation/fusion interactions.

L9 ANSWER 5 OF 14 MEDLINE on STN DUPLICATE 2
AN 1999227116 MEDLINE
DN PubMed ID: 10209255
TI **Calcium ions** as efficient cofactor of polycation-mediated **gene transfer**.
AU Haberland A; Knaus T; Zaitsev S V; Stahn R; Mistry A R; Coutelle C; Haller H; Bottger M
CS Franz Volhard Clinic at the Max Delbruck Center for Molecular Medicine, Wiltberg Strasse 50, D-13122, Berlin-Buch, Germany.
SO Biochimica et biophysica acta, (1999 Apr 14) 1445 (1) 21-30.
Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199905
ED Entered STN: 19990607
Last Updated on STN: 20030118
Entered Medline: 19990527
AB We investigated the effect of **calcium** on the transfection of non-viral **DNA transfer** systems. Cationic proteins such as the nuclear protein H1, the polycation polylysine and a number of commercial transfection agents exhibited high transfection rates in the presence of Ca2+. Without Ca2+ H1 and HMG1 were inactive in transfection of the human permanent endothelial cell line ECV 304 while cationic liposomes such as Lipofectin and Lipofectamine did not show any Ca2+ dependence. More detailed experiments showed that Ca2+ was replaceable by the lysosomotropic agent chloroquine. Furthermore, it was possible to separate the transfection-**enhancing** role of Ca2+ from the actual transfection process by adding Ca2+ to the cells after the transfection period and still to obtain a significant transgene expression. This makes it possible to distinguish between cellular uptake of H1 (or mediator)-**DNA** complexes and endocytotic release. We also replaced soluble Ca2+ by **Ca**-phosphate precipitates not containing **DNA** and obtained similar transfection results. This allowed us to suggest that the addition of free Ca2+ to the transfection medium resulted in nascent **Ca**-phosphate microprecipitates. The known fusogenic and membranolytic activity of such microprecipitates could facilitate the transport through and the release of the transfecting complexes from the endosomal/lysosomal compartment.